APPENDICES

APPENDIX A
WATER QUALITY

WATER QUALITY GOALS AND CRITERIA

Several agencies adopt goals and criteria (Table A-1) for the protection of beneficial uses of water (CVRWQCB 2000). The U.S. Environmental Protection Agency (EPA) has primary authority to implement provisions of the federal Clean Water Act (CWA) and establishes guidance used by state and other agencies in developing criteria and goals for protection of aquatic resources, human health, and other beneficial uses. The CWA requires each Regional Water Quality Control Board (RWQCB) to develop a Water Quality Control Plan (Basin Plan) for waterbodies within each of their jurisdictions. Within the Central Valley of California, the Central Valley RWQCB adopts the Basin Plan containing water quality objectives to protect beneficial uses, which for the Feather River watershed include municipal and domestic supply, agriculture, industry (including electrical power production), recreation, freshwater habitat, and wildlife habitat (CVRWQCB 1994).

Field Parameters Goals and Criteria

Basin Plan objectives have been developed for several parameters usually measured in the field, including dissolved oxygen (DO), pH, conductivity, turbidity, and temperature. Maintenance of specific water temperatures at the Feather River Fish Hatchery is required in an agreement with the DF&G. Another agreement with several water districts also contains temperature provisions for water diverted for irrigation.

Dissolved oxygen objectives of the Basin Plan that apply to all water bodies require a minimum level of 5.0 mg/L for waters designated as warm freshwater habitat, and 7.0 mg/L for cold freshwater habitat and spawning habitat. In addition, a minimum of 8.0 mg/L of DO is required from September 1 to May 31 in the Feather River from the Fish Barrier Dam at Oroville to Honcut Creek.

The Basin Plan stipulates that pH “shall not be depressed below 6.5 nor raised above 8.5.” In addition, “changes in normal ambient pH levels shall not exceed 0.5 in fresh waters with designated” cold or warmwater habitat beneficial uses.

Table A-1 Water quality goals (ug/L) (CVRWQCB 2000)

Parameter	RWQCB Basin Plan Objectives	U.S. EPA or California DHS Drinking Water Maximum Contaminant Level		Agricultural Goal	USEPA California Toxics Rule Freshwater Aquatic Life for Dissolved Metals		USEPA National Toxics Rule Criteria for Freshwater Aquatic Life for Total Recoverable Metals		USEPA National Ambient Water Quality Criteria Freshwater Aquatic Life Protection	
		Primary	Secondary		Dissolved Continuous Conc. (4 day average)	Dissolved Maximum Conc. (1 hour average)	Total Continuous Conc. (4 day average)	Total Maximum Conc. (1 hour average)	Continuous Conc. (4 day average)	Maximum Conc. (1 hour average)
Aluminum		1000	200	5000					87 [1]	750 [1]
Ammonia		1500								
Arsenic	10 [2]	50		100	150	340	190	360	190 [2]	360 [2]
Asbestos		7 MFL [3]								
ASAR				<3						
Barium	100 [2]	1000								
Boron				700						
Cadmium	0.22 [2]	5		10	2.2 [4]	4.3 [4]	1.1 [4]	3.9 [4]	[2,4]	[2,4]
Chloride			500,000	106,000						
Chromium		50 (total)		100 (Cr IV)	11	16	11	16	10	15
Conductivity			1,600	700						
Copper	5.6 [2]	1,300	1,000	200	9 [4]	13 [4]	12 [4]	18 [4]	[2,4]	[2,4]
Iron	300 [2]		300	5,000						1,000
Lead		15		5,000	[4]	[4]	3.2 [4]	82 [4]	[2,4]	[2,4]
Manganese	50 [2]		50	200						
Mercury		2				0.051	0.012	2.4	0.012 [5]	2.1 [2]
Molybdenum				10						
Nickel		100		200	52 [4]	470 [4]	160 [4]	1400 [4]	[2,4]	[2,4]
Nitrate (as N)		10								
pH	6.5 - 8.5		6.5 - 8.5							
Selenium		50		20	5 [5]	20 [5]	5	20	5 [5]	20 [5]
Silver	10 [2]		100		[4]	[4]		4.1	0.19 [2]	[2,4]
Zinc	16 [2]		5,000	2,000	120 [4]	120 [4]	110	120	[4]	[4]

Footnotes:
1. pH and temperature dependent
2. As dissolved
3. Million fibers per liter longer than 10 microns
4. Hardness dependent; criterion indicated based on hardness of 100 mg/L
5. As total recoverable

The objective in the Basin Plan for electrical conductivity for the North and Middle Forks of the Feather River and the Feather River downstream from Oroville Dam is a maximum of 150 μmhos/cm.

Numerical goals or criteria have not been established for natural turbidity levels. The Basin Plan specifies that "waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses." For controllable factors, allowable increases in turbidity are no more than 1 nephelometric turbidity unit (NTU) where natural turbidity ranges between 0 and 5 NTUs; 20 percent where natural turbidity ranges between 5 and 50 NTUs; 10 NTUs where natural turbidity ranges between 50 and 100 NTUs; and 10 percent where natural turbidity exceeds 100 NTUs.

Unless demonstrated that beneficial uses are not adversely affected, the Basin Plan requires that water temperatures of warm and cold freshwater habitat not be increased by more than 5ºF by controllable factors.

An agreement in 1983 between the DWR and DFG specifies water temperature requirements for the Feather River Fish Hatchery (DWR 1983). Water temperatures of the water supply for the hatchery must be maintained at 51°F from April 1 to May 15; 55°F from May 16 to 31; 56°F from June 1 to 15; 60°F from June 16 to August 15; 58°F from August 16 to 31; 52°F from September 1 to 30; 51°F from October 1 to November 30; and no greater than 55°F from December 1 to March 31. A temperature deviation of four degrees is allowed between April 1 and November 30. In addition, the agreement contains an objective for provision of suitable temperatures for fall-run salmon not later than September 15 below the Thermalito Diversion Dam and Thermalito Afterbay river outlet, as well as for shad, striped bass, and other warmwater fish between May 1 and September 1 below the Afterbay Outlet.

Several water districts in the Feather River watershed diverted water from the Feather River prior to construction of Oroville Dam. The Department entered into agreements with certain water districts to provide them water based upon prior rights. These agreements generally do not have specific requirements for water quality. The agreement among Richdale Irrigation District, Biggs-West Gridley Water District, Butte Water District, Sutter Extension Water District, and the Department includes terms describing amounts of water that the State shall make available to the districts. That agreement, however, provides that the State is not relieved of any liability for damages that may arise

from harm to crops due to reduction in temperatures of water available to the districts during the agricultural season as a result of water being colder than would have occurred if Oroville Dam had not been constructed (State of California, The Resources Agency, Department of Water Resources Agreement on Diversion of Water from the Feather River [May 27, 1969]). That agreement does not determine what temperature would in fact cause injury to crops. Local rice farmers in the area, as stated earlier in this document, assert a need for water of about 65° F from April through mid-May and 59° F during the remainder of the growing season.

Nutrient Goals and Criteria

The primary interest in nutrient concentrations in natural waters concerns stimulation of excessive growths of algae and macrophytes. The Basin Plan states that "water shall not contain biostimulatory substances which promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses." However, numerical criteria for nutrients have not been established.

The EPA is currently attempting to develop nutrient criteria and has published a draft guidance manual for rivers and streams (EPA 1999). Various studies cited in the guidance manual suggest that total phosphorus concentrations greater than 0.1 to 0.2 mg/L may stimulate undesirable growths of algae .

Ammonia at sufficient concentration has been found to be deleterious to aquatic life. In response, the EPA published criteria for continuous and maximum allowable ammonia levels for the protection of freshwater aquatic life (CVRWQCB 2000). These criteria are based on water pH and temperature.

Mineral Goals and Criteria

Minerals are naturally found in waters, generally at concentrations that do not produce adverse effects. However, low concentrations of minerals increase the toxicity of metals and the corrosiveness of water. Conversely, high concentrations of minerals can cause increased soap consumption in domestic use, staining of laundry fixtures, scale formation in industrial applications, and adverse effects to crops and soils.

While the Basin Plan states that "waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses," specific criteria for most minerals have not been formulated. However, electrical conductivity, for which goals have been

established, is indicative of the mineral concentration of water and can be used to determine general mineral quality.

The Basin Plan contains an objective for boron that is only applicable to the San Joaquin River watershed. However, the Food and Agriculture Organization of the United Nations established a goal of a maximum concentration of boron in irrigation water of 0.7 mg/L for protection of crops (CVRWQCB 2000).

The U.S. Department of Agriculture developed a classification for irrigation water to maintain tilth and structure of soil based on concentrations of sodium, calcium, magnesium, and potassium (SWRCB 1971). This classification scheme uses concentrations of these minerals to calculate an adjusted sodium adsorption ratio. Ratios less than 6.0 indicate no problems with agricultural use of the water, while higher ratios indicate increasing problems.

Metals Goals and Criteria

Metals in the aquatic environment are a concern due to direct toxicity to aquatic life and other beneficial uses. Several agencies have adopted criteria addressing effects of metals to beneficial uses (CVRWQCB 2000).

The California Department of Health Services (DHS) is responsible for adopting criteria for the protection of drinking water. These standards are required to be at least as stringent as those adopted by the EPA. DHS has adopted maximum contaminant levels (MCLs) for several metals as part of the drinking water standards.

Criteria for protection of crops from metals toxicity have not been developed. However, agricultural goals have been published by the Food and Agriculture Organization of the United Nations to protect agricultural uses of water.

The EPA established National Ambient Water Quality Criteria to protect human health and welfare and freshwater and marine aquatic life from pollutants, including metals, in surface water. These criteria were last updated in 1986.

In December 1992, the EPA adopted the National Toxics Rule, which updated many of the earlier criteria. This rule required water quality samples to be analyzed for total recoverable concentrations of metals to determine compliance with the aquatic life

protective criteria. Many of the aquatic life criteria were converted to dissolved concentrations in an amendment by the EPA in 1995.

Legal challenge resulted in repeal of the State Water Resources Control Board's Inland Surface Waters Plan and Enclosed Bays and Estuaries Plan. Therefore, the EPA proposed and subsequently adopted on May 18, 2000 water quality criteria (known as the California Toxics Rule [CTR]) for priority toxic pollutants for California's inland surface waters and enclosed bays and estuaries (EPA 2000). The CTR establishes criteria for total mercury and the dissolved fraction of other metals.

Biological Monitoring Goals and Criteria

Monitoring of biological organisms is increasingly being used as an indicator of water quality. Benthic macroinvertebrates comprise a large group of insect and other bottom-dwelling organisms that are naturally present in surface water bodies. The types of macroinvertebrates present reflect the water quality history. Certain types of organisms are less tolerant than others of various types of perturbations. Perturbations generally result in elimination or severe reduction in numbers of individuals or species of intolerant organisms and development of large populations of tolerant species due to lack of competition or predation. In relatively undisturbed environments, communities are composed of large numbers of species with no individual species present in overwhelming abundance.

The Basin Plan states that "the survival of aquatic life in surface waters subjected to a waste discharge or other controllable water quality factors shall not be less than that for the same water body in areas unaffected by the waste discharge." Numerical criteria for benthic macroinvertebrate communities have not been developed. However, numerous indices are available for evaluating benthic macroinvertebrate community data. One of the earliest and perhaps most applicable indices is the diversity index (EPA 1973). This index uses the richness of species and distribution of individuals among the species to determine aquatic health. The calculated species diversity can be compared to a hypothetical maximum diversity to measure the distribution of individuals among the species, or equitability. Application of these indices to benthic macroinvertebrate data from a variety of sources has shown that diversity in unpolluted water generally ranges between three and 4, whereas in polluted water the diversity is generally less than 1. Equitability values generally ranges between 0.6 to 0.8 in streams without degradation,

but even slight levels of degradation reduces equitability generally to a range between 0.0 and 0.3.

APPENDIX B
WILDLIFE SPECIES OCCURRENCE IN BUTTE COUNTY

Amphibians

COMMON NAME	SCIENTIFIC NAME
Bullfrog	*Rana catesbeiana*
California newt	*Taricha torosa*
California slender salamander	*Batachoseps attenuatus*
California tiger salamander	*Ambystoma tigrinum*
Ensatina	*Ensatina eschschltzi*
foothill yellow-legged frog	*Rana boylei*
long-toed salamander	*Ambystoma macrodactylum*
mountain yellow-legged frog	*Rana muscosa*
Pacific chorus frog	*Hyla regilla*
red-legged frog	*Rana aurora*
rough-skinned newt	*Taricha granulosa*
western spadefoot	*Scaphiopus hammondi*
western toad	*Bufo boreas*

Reptiles

California mountain kingsnake	*Lampropeltis zonata*
California whipsnake	*Masticophis lateralis*
Coachwhip	*Masticophis*
Coast horned lizard	*Phrynosoma coronatum*
common garter snake	*Thamnophis sirtalis*
common kingsnake	*Lampropeltis getulus*
Gilberts skink	*Eumeces gilberti*
gopher snake	*Pituophis melanoleucus*
night snake	*Hypsigiena torquata*
northern alligator lizard	*Gerrhonotus coeruleus*
Racer	*Coluber constrictor*
ringneck snake	*Diadophis punctatus*
rubber boa	*Charina bottae*
sagebrush lizard	*Sceloporus graciosus*
sharp-tailed snake	*Contia tenuis*
southern alligator lizard	*Gerrhonotus multicarinatus*
western aquatic garter snake	*Thamnophis couchi*

western fence lizard	*Sceloporus occidentalis*
western pond turtle	*Clemmys marmorata*
western rattle snake	*Crotalis viridis*
western skink	*Eumeces skiltonianus*
western terrestrial garter snake	*Thamnophis elegans*
western whiptail	*Cnemidophorus tigris*
Birds	
acorn woodpecker	*Melanerpes formicivorus*
American avocet	*Recurvirostra americana*
American bittern	*Botaurus lentiginosus*
American coot	*Fulica americana*
American crow	*Corvus brachyrhynchos*
American dipper	*Cinculus mexicanus*
American goldfinch	*Carduelis tristis*
American kestrel	*Falco sparverius*
American pipit	*Anthus rubescens*
American robin	*Turdus migratorius*
American white pelican	*Pelecanus erythrorhynchos*
American widgeon	*Anas americana*
Anna's hummingbird	*Calypte anna*
ash-throated flycatcher	*Myiarchus cinerascens*
bald eagle	*Haliaeetus leucocephalus*
band-tailed pigeon	*Columba fasciata*
bank swallow	*Riparia riparia*
barn owl	*Tyto alba*
barn swallow	*Hirundo rustica*
Barrow's goldeneye	*Bucephala islandica*
belted kingfisher	*Ceryle alcyon*
Bewick's wren	*Thryomanes bewickii*
black phoebe	*Sayornis nigricans*
black swift	*Cypesloides niger*
black tern	*Chlidonias niger*
black-backed woodpecker	*Picoides arcticus*
black-chinned hummingbird	*Archilochus alexandri*
black-chinned sparrow	*Spizella atrogularis*
black-crowned night heron	*Nycticorax nycticorax*

black-headed grosbeak	*Pheucticus melanocephalus*
black-necked stilt	*Himantopus mexicanus*
black-throated gray warbler	*Dendroica nigrescens*
black-throated sparrow	*Amphispiza bilineata*
blue grosbeak	*Guiraca caerulea*
blue grouse	*Dendragapus obscurus*
blue-gray knatcatcher	*Polioptilla caerulea*
blue-winged teal	*Anas discors*
Brewer's blackbird	*Euphagus cyanocephalus*
brown creeper	*Certhia americana*
brown-headed cowbird	*Molothus ater*
bufflehead	*Bucephala albeola*
burrowing owl	*Athene cunicularia*
bushtit	*Psaltriparus minimus*
California gull	*Larus californicus*
California quail	*Callipepla californica*
California thrasher	*Toxostoma redivivum*
California towhee	*Pipilo crissalis*
calliope hummingbird	*Stellula calliope*
Canada goose	*Branta canadensis*
canvasback	*Aythya valisineria*
canyon wren	*Catherpes mexicanus*
Cassin's finch	*Carpodacus cassinii*
cattle egret	*Bubulcus ibis*
cedar waxwing	*Bombycilla cedrorum*
chestnut-backed chickadee	*Parus refescens*
chipping sparrow	*Spizella passerina*
cinnamon teal	*Anas cyanoptera*
Clark's grebe	*Aechmophorus clarkii*
cliff swallow	*Hirundo pyrrhonota*
common goldeneye	*Bucephala clangula*
common loon	*Gavia immer*
common merganser	*Mergus merganser*
common moorhead	*Gallinula chloropus*
common nighthawk	*Chordeiles minor*
common poorwill	*Phalaenoptilis nuttallii*

common raven	*Corvus corax*
common snipe	*Gallinago gallinago*
common yellowthroat	*Geothlypis trichas*
Cooper's hawk	*Accipiter cooperii*
dark-eyed junco	*Junco hyemalis*
double-crested cormorant	*Phalacrocorax auritus*
downy woodpecker	*Picoides pubescens*
dunlin	*Calidris alpina*
dusky flycatcher	*Empidonax oberholseri*
eared grebe	*Podiceps nigricollis*
eurasian widgeon	*Anas penelope*
European starling	*Sturnus vulgaris*
evening grosbeak	*Coccothraustes vespertinus*
ferruginous hawk	*Buteo regalis*
flammulated owl	*Otus flammeolus*
Forester's tern	*Sterna forsteri*
fox sparrow	*Passerella iliaca*
glaucous-winged gull	*Larus glaucescens*
golden eagle	*Aquila chrysaetos*
golden-crowned kinglet	*Regulus satrapa*
golden-crowned sparrow	*Zonotrichia atricapilla*
great blue heron	*Ardea herodias*
great egret	*Casmerodius albus*
great horned owl	*Bubo virginianus*
greater roadrunner	*Geococcyx californianus*
greater scaup	*Aythya marila*
greater white-fronted goose	*Anser albifrons*
greater yellowlegs	*Tringa melanoleuca*
green-backed heron	*Butorides striatus*
green-tailed towhee	*Pipilo chlorurus*
green-winged teal	*Anas crecca*
hairy woodpecker	*Picoides villosus*
Hammond's flycatcher	*Empidonax hammondii*
hermit thrush	*Catharus guttatus*
hermit warbler	*Dendroica coccidentalis*
herring gull	*Larus argentatus*

hooded merganser	*Lophodytes cucullatus*
hooded oriole	*Icterus cucullatus*
horned lark	*Eremophila alpestris*
house finch	*Carpodacus mexicanus*
house sparrow	*Passer domesticus*
house wren	*Troglodytes aedon*
Hutton's vireo	*Vireo huttoni*
killdeer	*Charadrius vociferus*
lapland longspur	*Calcarius lapponicus*
lark sparrow	*Chondestes grammacus*
Lawrence's goldfinch	*Carduelis lawrencei*
lazuli bunting	*Passerina amoena*
least bittern	*Ixobrychus exilis*
least sandpiper	*Calidris minutilla*
lesser goldfinch	*Carduelis psaltria*
lesser nighthawk	*Chordeiles acutipennis*
lesser scaup	*Aythya affinis*
Lewis' woodpecker	*Melanerpes lewis*
Lincoln's sparrow	*Melospiza lincolnii*
loggerhead shrike	*Lanius ludovicianus*
long-billed curlew	*Numenius americanus*
long-billed dowitcher	*Limnodromus scolopaceus*
long-eared owl	*Asio otus*
MacGillivray's warbler	*Oporonis tolmiei*
mallard	*Anas platyrhynchos*
marsh wren	*Cistothorus palustris*
merlin	*Falco columbarius*
mew gull	*Larus canus*
mountain bluebird	*Sialia currucoides*
mountain chickadee	*Parus gambeli*
mountain quail	*Oreortyx pictus*
mourning dove	*Zenaida macroura*
Nashville warbler	*Vermivora ruficapilla*
northen rough-winged swallow	*Stelgidopteryx serropennis*
northern flicker	*Colaptes auratus*
northern goshawk	*Accipiter gentilis*

northern harrier	*Circus cyaneus*
northern mockingbird	*Mimus polyglottos*
northern oriole	*Icterus galbula*
northern pintail	*Anas acuta*
northern pygmy-owl	*Glaucidium gnoma*
northern saw-whet owl	*Aegolius acadicus*
northern shoveler	*Anas clypeata*
northern shrike	*Lanius excubitor*
Nuttall's woodpecker	*Picoides nuttallii*
oak titmouse	*Parus inornatus*
olive-sided flycatcher	*Contopus borealis*
orange-crowned warbler	*Vermivora celata*
osprey	*Pandion haliaetus*
Pacific-slope flycatcher	*Empidonax difficilis*
peregrine falcon	*Falco peregrinus*
phainopepla	*phainopepla nitens*
pied-billed grebe	*Podilymbus podiceps*
pileated woodpecker	*Dryocopus pileatus*
pine siskin	*Carduelis pinus*
prairie falcon	*Falco mexicanus*
purple finch	*Carpodacus purpureus*
purple martin	*Progne subis*
red crossbill	*Loxia curvirostra*
red-breasted nuthatch	*Sitta canadensis*
red-breasted sapsucker	*Sphyrapicus ruber*
red-shouldered hawk	*Buteo lineatus*
red-tailed hawk	*Buteo jamaicensis*
red-winged blackbird	*Agelaius phoeniceus*
redhead	*Aythya americana*
ring-billed gull	*Larus delawarensis*
ring-necked duck	*Aythya collaris*
ring-necked pheasant	*Phasianus colochicus*
rock dove	*Columba livia*
rock wren	*Salpinctes obsoletus*
Ross' goose	*Chen rossii*
rough-legged hawk	*Buteo lagopus*

ruby-crowned kinglet	*Regulus calendula*
ruddy duck	*Oxyura jamaicensis*
rufous-crowned sparrow	*Aimophila ruficeps*
rufous-sided towhee	*Pipilo erythrophthalmus*
sandhill crane	*Grus canadensis*
savannah sparrow	*Passerculus sandwichensis*
Say's phoebe	*Sayornis saya*
scrub jay	*Aphelocoma coerulescens*
sharp-shinned hawk	*Accipiter striatus*
short-eared owl	*Asio flammeus*
snow goose	*Chen caerulescens*
snowy egret	*Egretta thula*
solitary vireo	*Vireo solitarius*
song sparrow	*Melospiza melodia*
Sora	*Porzana carolina*
spotted owl	*Strix occidentalis*
spotted sandpiper	*Actitis macularia*
Stellar's jay	*Cyanocitta stelleri*
Swainson's hawk	*Buteo swansoni*
Swainson's thrush	*Catharus ustulatus*
Thayer's gull	*Larus thayeri*
Townsens's solataire	*Myadestes townsendi*
tree swallow	*Tachycineta bicolor*
tricolored blackbird	*Agelaius tricolor*
tundra swan	*Cygnus columbianus*
turkey vulture	*Cathartes aura*
varied thrush	*Ixoreus naevius*
Vaux's swift	*Chaetura vauxi*
violet-green swallow	*Tachycineta thalassina*
Virginia rail	*Rallus limicola*
warbling vireo	*Vireo gilvus*
western bluebird	*Sialia mexicana*
western grebe	*Aechmophorus occidentalis*
western kingbird	*Tyrannus verticalis*
western meadowlark	*Sturnella neglecta*
western sandpiper	*Calidris mauri*

western screech owl	*Otus kennicottii*
western tananger	*Piranga ludoviciana*
western wood pewee	*Contopus sordidulus*
white-breasted nuthatch	*Sitta carolinensis*
white-crowned sparrow	*Zonotrichia leucophrys*
white-faced ibis	*Plegadis chihi*
white-headed woodpecker	*Picoides albolarvatus*
white-tailed kite	*Elanus caeruleus*
white-throated swift	*Aeronautes saxatalis*
wild turkey	*Meleagris gallopavo*
Williamson's sapsucker	*Sphyrapicus thyroideus*
willow flycatcher	*Empidonax traillii*
Wilson's warbler	*Wilsonia pusilla*
winter wren	*Troglodytes troglodytes*
wood duck	*Aix sponsa*
wrentit	*Chamaea fasciata*
yellow warbler	*Dendroica petechia*
yellow-billed cuckoo	*Coccyzus americanus*
yellow-billed magpie	*Pica nuttalli*
yellow-breasted chat	*Ictervia virens*
yellow-headed blackbird	*Xanthocephalus xanthocephalus*
yellow-rumped warbler	*Dendroica coronata*
Mammals	
badger	*Taxidea taxus*
beaver	*Castor candensis*
Belding's ground squirrel	*Spermophilus beldingi*
big brown bat	*Eptesicus fuscus*
black bear	*Ursus americanus*
black rat	*Rattus rattus*
black-tailed hare	*Lepus californicus*
bobcat	*Felis rufus*
Botta's pocket gopher	*Thomomys bottae*
Brazilian free-tailed bat	*Tadarida brasiliensis*
broad-footed mole	*Scapanus latimanus*
brush mouse	*Peromyscus boylii*
brush rabbit	*Sylvilagus bachmani*

California ground squirrel	*Spermophilus beecheyi*
California kngaroo rat	*Dipodomys californicus*
California myotis	*Myotis californicus*
California vole	*Microtus californicus*
coyote	*Canis latrans*
deer mouse	*Permyscus maniculatus*
desert cottontail	*Sylvilagus audubonii*
Douglas' squirrel	*Tamiasciurus douglasii*
dusky-footed woodrat	*Neotoma fuscipes*
ermine	*Mustela erminea*
fisher	*Martes pennanti*
fringed myotis	*Myotis thysanodes*
golden-mantled ground squirrel	*Spermophilus lateralis*
grat fox	*Urocyon cinereoargentus*
hoary bat	*Lasiurus cinereus*
house mouse	*Mus musculus*
little brown myotis	*Myotis lucifugus*
long-eared myotis	*Myotis evotis*
long-legged myotis	*Myotis volans*
long-tailed vole	*Microtus longicaudus*
long-tailed weasel	*Mustela frenata*
marten	*Martes americana*
mink	*Mustela vison*
montane vole	*Mictotus montanus*
mountain lion	*Felis concolor*
mountain pocket gopher	*Thomomys monticola*
mule deer	*Odocoileus hemionus*
muskrat	*Ondatra zibethicus*
northern flying squirrel	*Glaucomys sabrinus*
Norway rat	*Rattus norvegicus*
pallid bat	*Antrozous pallidus*
pinyon mouse	*Peromyscus truei*
porcupine	*Erethizon dorsatum*
raccoon	*Procyon lotor*
red bat	*Lasiurus borealis*
red fox	*Vulpes vulpes*

ringtail	*Bassariscus astutus*
river otter	*Lutra canadensis*
silver-haired bat	*Lasionycteris noctivagans*
small-footed myotis	*Myotis leibii*
striped skunk	*Mephitis mephitis*
Townsend's big-eared bat	*Plecotus townsendii*
Trowbridge's shrew	*Sorex trowbridgii*
Virginia opossum	*Didelphis virginiana*
water shrew	*Sorex palustris*
western gray squirrel	*Sciurus griseus*
western harvest mouse	*Riethrodontomys megalotis*
western pipistrelle	*Pipistrellus hesperus*
western spotted skunk	*Spilogale gracilis*
wild pig	*Sus scrofa*
Yuma myotis	*Myotis yumanensis*